



Device Material Content

5555 NE Moore Ct.
Hillsboro OR 97124
custreq@lsc.com

February, 2019

Package: 132 csBGA
Total Device Weight 0.124 Grams

Package Code:

MG132

Products:

XO2

Assembly: ASEM

Size (mm): 8 x 8

Lead pitch (mm): 0.5

MSL: 3

Reflow max (°C): 250

	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	6.93%	0.0086	6.93%	0.0086	Silicon chip	7440-21-3	100.00%	Die size: 4.71 x 2.90 mm
Mold Compound	56.76%	0.0704	2.84%	0.0035	Epoxy Resin A	-	5.00%	Mold Compound: Sumitomo G750SE (ULA)
			0.85%	0.0011	Epoxy Resin B	-	1.50%	
			2.84%	0.0035	Phenol Novolac	9003-35-4	5.00%	
			2.84%	0.0035	Metal Hydroxide	-	5.00%	
			0.17%	0.0002	Carbon Black	1333-86-4	0.30%	
			47.22%	0.0586	Silica Fused	60676-86-0	83.20%	
D/A Epoxy	1.12%	0.0014	0.90%	0.00111	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.22%	0.00028	Esters & resins	-	20.00%	
Wire	1.44%	0.0018	1.42%	0.0018	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0000	Palladium	7440-05-3	1.50%	
Solder Balls	11.20%	0.0139	10.81%	0.0134	Tin (Sn)	7440-31-5	96.50%	SAC305
			0.34%	0.0004	Silver (Ag)	7440-22-4	3.00%	
			0.06%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	14.65%	0.0182	9.96%	0.0124	Glass fiber	65997-17-3	68.00%	BT Resin CCL-HL832NX-A
			4.69%	0.0058	BT Resins	-	32.00%	
Solder Mask	2.42%	0.0030	1.32%	0.00163	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.18%	0.00022	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.08%	0.00010	Morpholine derivative	71868-10-5	3.32%	
			0.07%	0.00009	Silicon dioxide	7631-86-9	3.00%	
			0.07%	0.00009	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.00001	Carbon black	1333-86-4	0.24%	
			0.70%	0.00086	Trade secret ingredients	-	28.74%	
Foil	5.48%	0.0068	4.63%	0.0057	Copper	7440-50-8	84.57%	
			0.81%	0.0010	Nickel plating	7440-02-0	14.70%	
			0.04%	0.0001	Gold plating	7440-57-5	0.74%	

Notes: * 0.15% max. concentration of Bisphenol A (CAS# 80-05-7) in substrate laminate material as impurity - not intentionally added.

The values listed above are nominal values based on studies of representatives of this particular package type, and are believed to be as accurate as possible.

Constituent substances and proportions in epoxy materials are before curing.

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	% of Total Pkg. Wt.	Weight (g)	% of Total Pkg. Wt.	Weight (g)	Substance	CAS #	% of Subst.	Notes / Assumptions:
Die	6.93%	0.0086	6.93%	0.0086	Silicon chip	7440-21-3	100.00%	Die size: 4.71 x 2.90 mm
Mold Compound	56.76%	0.0704	49.66%	0.0616	Silica	60676-86-0	87.50%	Mold Compound: Kyocera KE-G2250 series (ULA)
			3.69%	0.0046	Epoxy resin	-	6.50%	
			3.12%	0.0039	Phenol Resin	-	5.50%	
			0.28%	0.0004	Carbon Black	1333-86-4	0.50%	
D/A Epoxy	1.12%	0.0014	0.90%	0.00111	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2100A
			0.22%	0.00028	Esters & resins	-	20.00%	
Wire	1.44%	0.0018	1.42%	0.0018	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball
			0.02%	0.0000	Palladium	7440-05-3	1.50%	
Solder Balls	11.20%	0.0139	11.04%	0.0137	Tin (Sn)	7440-31-5	98.50%	SAC105
			0.11%	0.0001	Silver (Ag)	7440-22-4	1.00%	
			0.06%	0.0001	Copper (Cu)	7440-50-8	0.50%	
Substrate	14.65%	0.0182	9.96%	0.0124	Glass fiber	65997-17-3	68.00%	BT Resin CCL-HL832NX-A
			4.69%	0.0058	BT Resins	-	32.00%	
Solder Mask	2.42%	0.0030	1.32%	0.00163	Quartz	14808-60-7	54.37%	Solder mask PSR4000 AUS 308
			0.18%	0.00022	Dipropylene glycol monomethyl ether	34590-94-8	7.33%	
			0.08%	0.00010	Morpholine derivative	71868-10-5	3.32%	
			0.07%	0.00009	Silicon dioxide	7631-86-9	3.00%	
			0.07%	0.00009	Silica, amorphous	112945-52-5	3.00%	
			0.01%	0.00001	Carbon black	1333-86-4	0.24%	
			0.70%	0.00086	Trade secret ingredients	-	28.74%	
Foil	5.48%	0.0068	4.63%	0.0057	Copper	7440-50-8	84.57%	
			0.81%	0.0010	Nickel plating	7440-02-0	14.70%	
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Mold Compound	56.76%	0.0704	3.97%	0.0049	Solid Epoxy Resin	-	7.00%	Mold Compound: Hitachi (Nitto) GE-110LS-V (ULA)	
			2.84%	0.0035	Phenol Resin	-	5.00%		
			48.24%	0.0598	Silica	60676-86-0	85.00%		
			1.42%	0.0018	Metal Hydroxide	-	2.50%		
			0.28%	0.0004	Carbon Black	1333-86-4	0.50%		
D/A Epoxy	1.12%	0.0014	0.90%	0.00111	Silver	7440-22-4	80.00%	Die attach epoxy: Henkel (Ablebond) 2300	
			0.22%	0.00028	Esters & resins	-	20.00%		
Wire	1.44%	0.0018	1.42%	0.0018	Copper	7440-50-8	98.50%	0.8 mil diameter; 1 wire per solder ball	
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